agricultural marketing

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AMS Standards for Christmas Trees and Turkeys

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ORVILLE L. FREEMAN
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Cover Page

Christmas is a busy season for everyone, especially the homemaker and the folks who supply her with farm products. Among the "unseen" helpers preparing for the holidays are the USDA employees who supply marketing services. The turkey has almost certainly passed the scrutiny of an AMS inspector, to make sure it's wholesome. And the chances are better than 3 to 1 that it also bore a USDA shield certifying its grade. A seasonal task facing other AMS workers is that of filling requests for copies of U.S. Standards for quality of Christmas trees. Last year, the sale of 45 million Christmas trees added up to an $85 million business. And even the mistletoe is an agricultural product—and AMS research workers, applying the results of research on other products, have figured out ways to improve the market by making it last longer and keeping it free from mold.

Editor, MILTON HOFFMAN
Assistant Editor, JAMES A. HORTON

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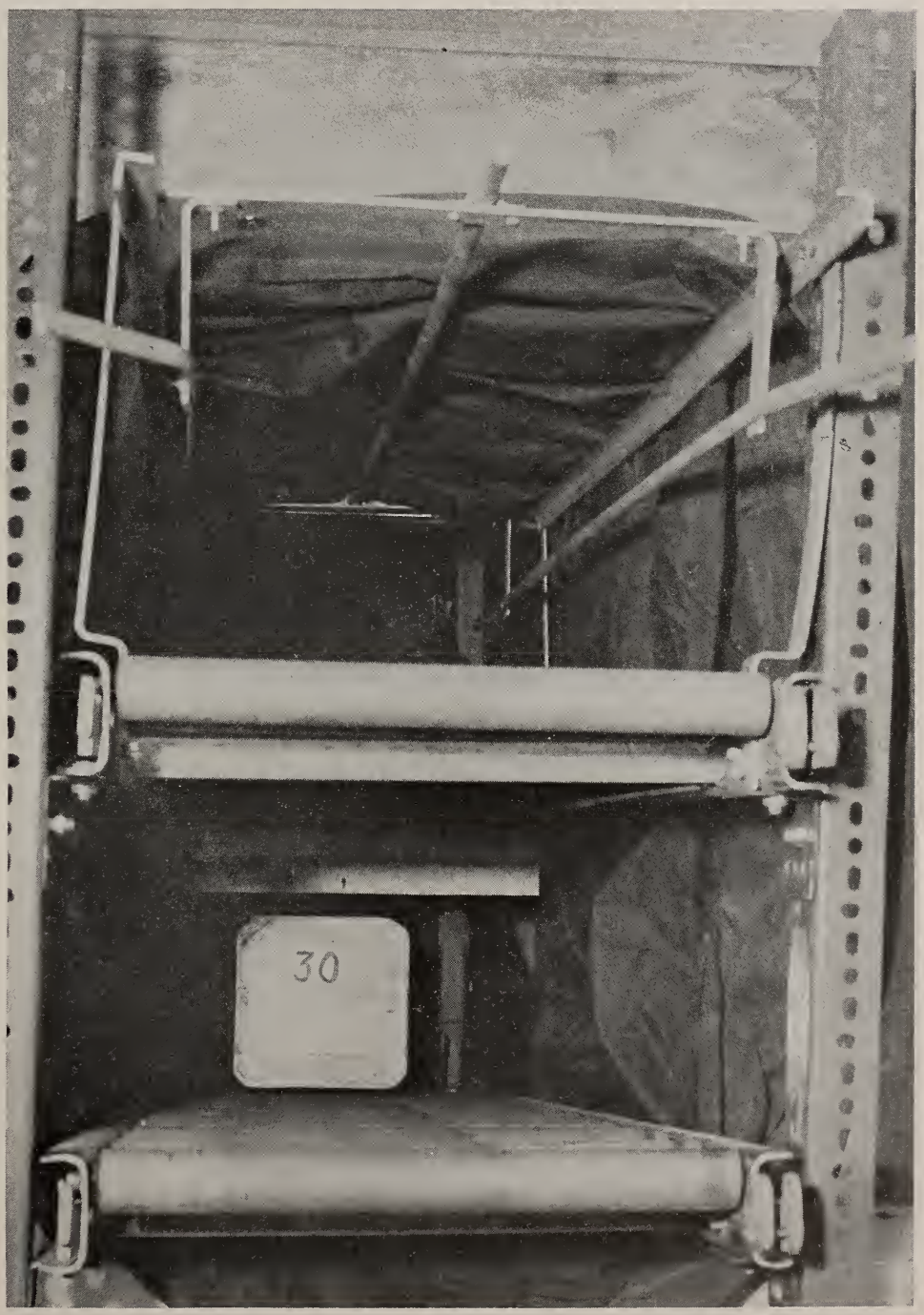
Reducing Food Spoilage With Atomic Energy

Preliminary Tests Bring Promising Results

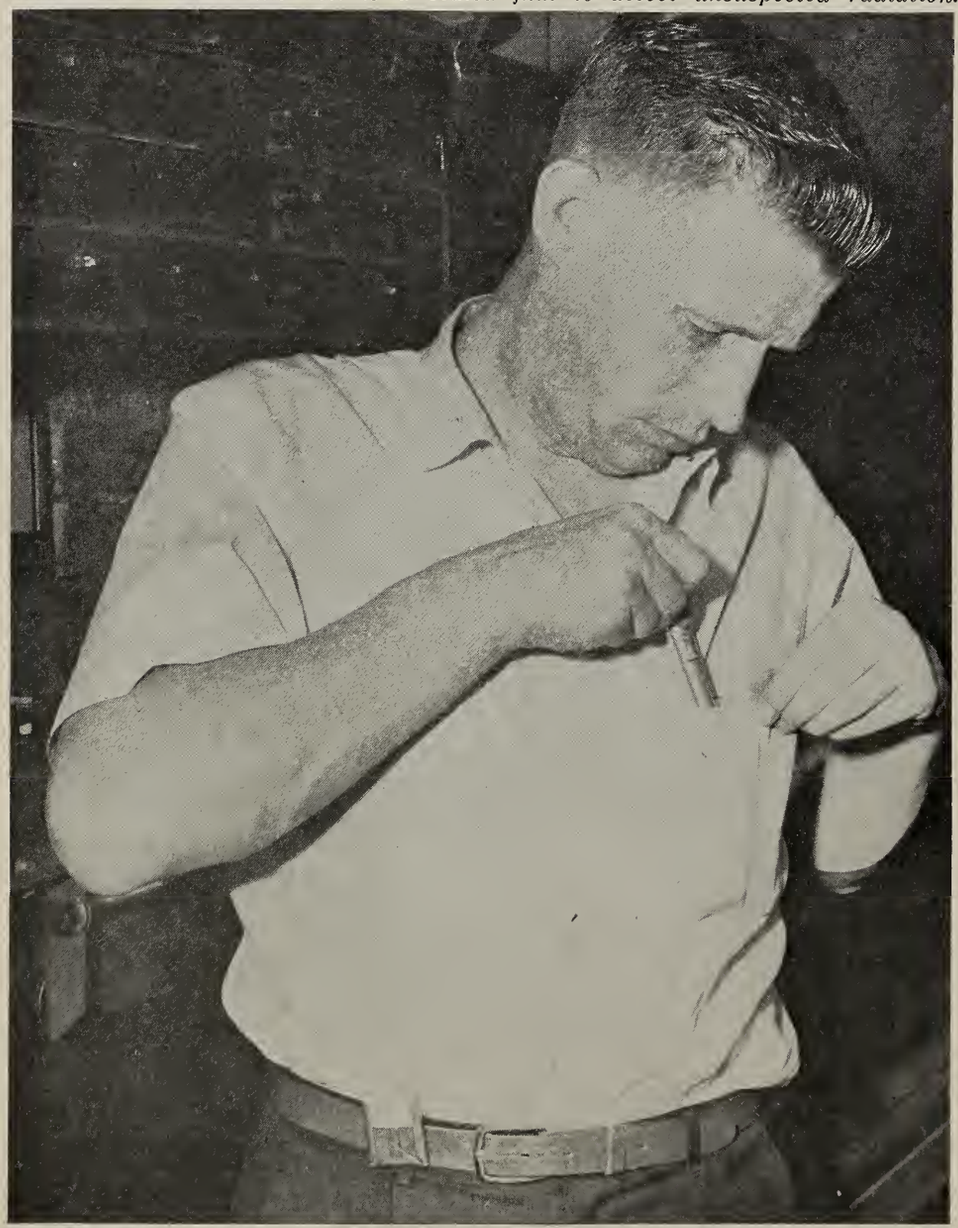
THE treatment of perishable foods with light doses of gamma irradiation to reduce spoilage before the foods reach the consumer has shown promising results in preliminary tests by Agricultural Marketing Service researchers in the U. S. Department of Agriculture laboratory in Fresno, Calif.

Peaches, strawberries, nectarines, figs, peppers, asparagus, and other farm products were subjected to varying doses



Above, the mobile cobalt irradiator is being positioned at the Fresno, Calif. lab for use in treating fruits and vegetables over a six-month period. Right, upper conveyor carries buckets of food from lab to irradiator and lower conveyor returns them.

Above, a biological aid retrieves the buckets after they have been treated in the irradiator. Below, inside the van housing the irradiator is John Worswick, engineer with Atomic Energy of Canada. He is clipping to his pocket a radiation monitor which all visitors inside the van are required to wear. Attached to his belt is a sealed film to detect unsuspected radiation.



of gamma rays during the six-month study, and the results of the tests are now being tabulated.

The researchers emphasized that the work is still in the experimental stage, but said the preliminary results appear favorable enough to encourage further testing. Negotiations are under way to extend the availability of the mobile irradiator through March 30.

The basic technique is to treat the commodities with irradiation doses small enough so as not to substantially change the food, but high enough to control decay organisms which might attack the produce during the marketing period. Irradiation would be used as an aid to refrigeration during storage.

Some of the preliminary findings are as follows:

Figs—irradiation of some varieties indicated excellent mold control without injuring the fruit; surface decay absent from treated fruit, while the non-treated fruit showed 50 percent spotting.

Pears—ripening delayed, indicating a possible advantage in lengthening storage and marketing life.

Nectarines—decay well-controlled in fruit from an orchard heavily infected with brown rot; only 2.5 percent of the treated fruit showed signs of infection, against 55 percent of the non-treated fruit.

Strawberries—sharp reduction in decay after treatment. When the irradiation dosage and exposure is properly controlled, researchers have found, there is a minimum of adverse effect on appearance, taste, texture and nutritive value.

The gamma rays used in the tests were the "clean" type, inducing no radioactivity in the products treated. Repeated radiological tests by another laboratory resulted in negative reports on possible contamination during treatment.

The study was made possible through the use of a mobile irradiator in the AMS laboratory in Fresno, under a lease arrangement between the U. S. Atomic Energy Commission and Atomic Energy of Canada. The 45-ton irradiation unit was installed in June, and the testing continued through November.

Marketing researchers said this was the first time such irradiation tests have been conducted with large quantities of produce with equipment that can treat small-size packages.

With the self-contained irradiation unit, the researchers were able to test as much as 100 pounds of food an hour. Commercial-size packages were used wherever feasible. For instance, berries were tested in small crates, peaches in polyethylene bags, and grapes and other fruits in consumer packages.

The products to be tested were placed in buckets measuring 8 by 8 by 15 inches. The buckets, in a ferris wheel-like conveyor arrangement, were carried around a quantity of radioactive cobalt so that all four sides were exposed to the gamma rays.

The tests included several varieties of each of the farm products and each variety was tested under varying dosages and exposures to the gamma rays. Preliminary observations revealed that different varieties of the same product reacted differently to a given treatment.

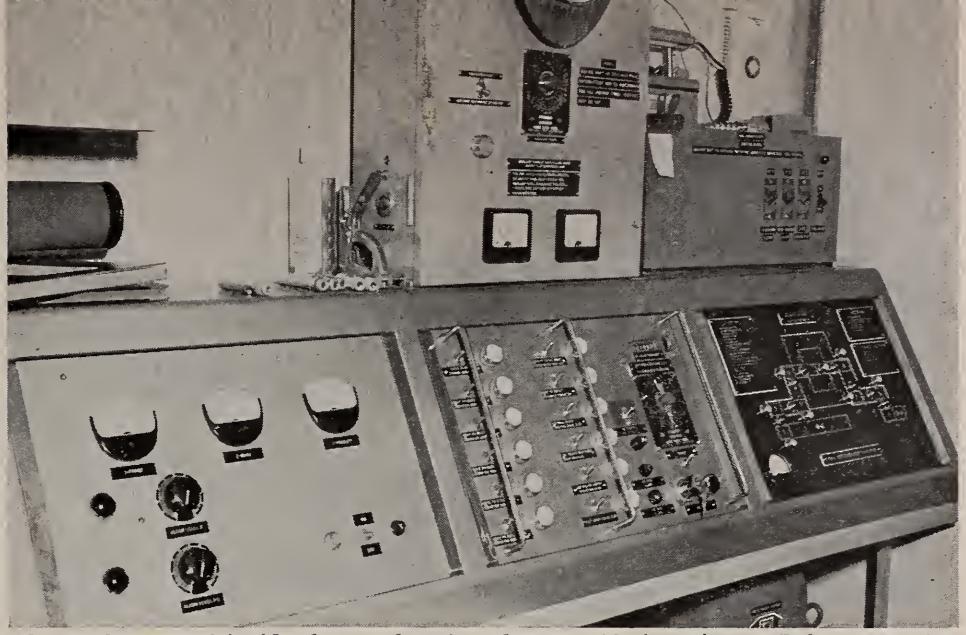
The irradiation tests are to be followed by further testing to determine the effect of the exposure on quality of the product. For instance, tests with wheat will be followed by baking tests, and the quality of the resulting loaves of bread will be studied. Similar follow-up studies are to be conducted with other products tested.

In addition to the perishable commodities, some work was also done with dried fruits and grains, and with treatment of insects which infest stored products. This work is now being evaluated.

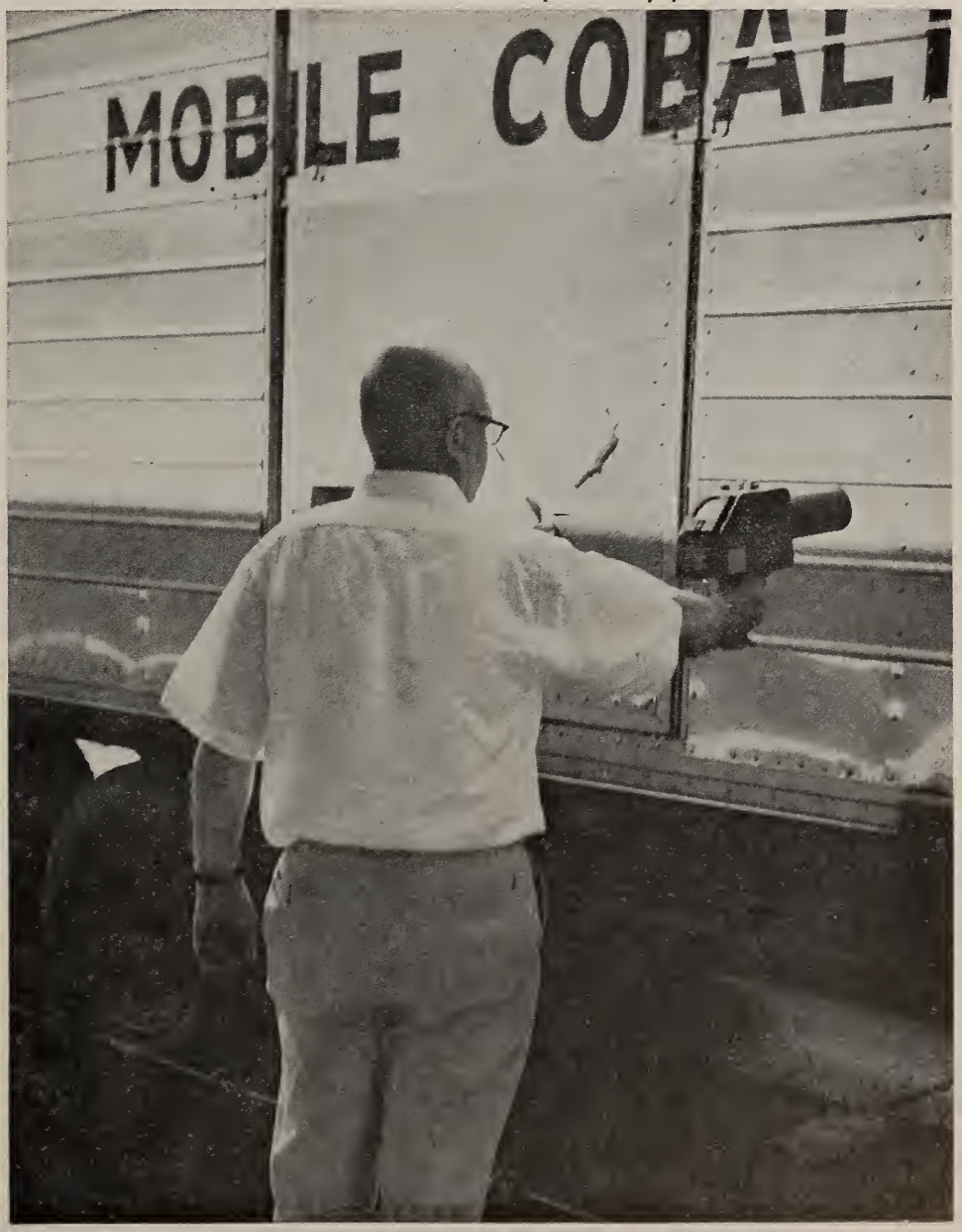
The work at Fresno is part of a renewed interest in the use of irradiation as a practical commercial process for the preservation of foodstuffs. The new interest was sparked by a Food and Drug Administration decision in 1963 to permit unrestricted public consumption of fresh bacon radio-sterilized by cobalt-60. Clearance is also expected for other foods, such as chickens, ham, and white potatoes.

Two nations have already approved use of potatoes protected in this way from sprouting. Doses of varying degrees have been found to sterilize insect pests of stored grain, thereby promising effective nonchemical pest control.

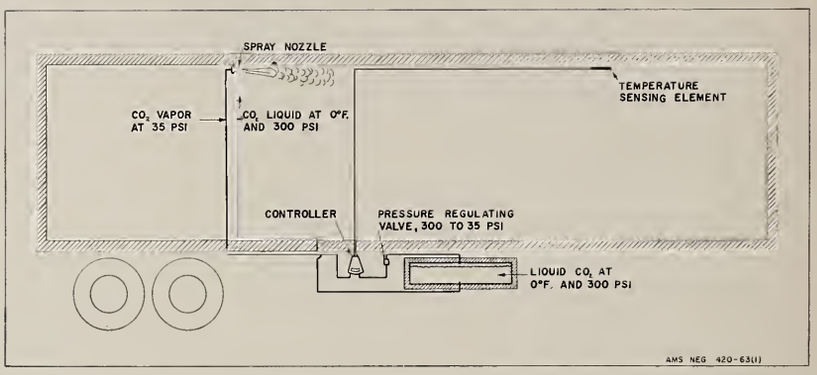
The AMS researchers in Fresno hope to determine whether gamma ray doses may be practically used to prolong storage and shelf life of food, thereby promising a better product for the consumer and possibly a longer period during which some foods may be available in non-processed form.



Above, the control inside the van housing the portable irradiator. Below, checking the mobile unit for irradiation with a geiger counter. The irradiator making the study possible was obtained under a lease arrangement between the U. S. Atomic Energy Commission and Atomic Energy of Canada. The unit enabled researchers to test as much as 100 pounds of food an hour.



Nitrogen Comforts Fruits and Vegetables



Controlled storage atmosphere in the piggyback-trailer virtually puts fruits and vegetables to sleep to delay ripening and, together with low temperatures, often controls spoilage organisms that attack the produce.

By James E. Grunig

ALTHOUGH they're probably grown hundreds of miles away, fruits and vegetables usually arrive at your table ripe, fresh, and wholesome. These same fruits and vegetables weren't so ripe when they were picked. Living and breathing, they ripened between harvest and arrival at your table.

But because decay organisms and discoloration often work their spoiling fingers into these delicate commodities, refrigeration systems are used to keep the fruits and vegetables at proper temperatures while they're traveling in truck trailers and rail cars.

In a further effort to get fresh produce to your table, marketing researchers in the Agricultural Marketing Service of the U. S. Department of Agriculture have experimented with controlled storage atmospheres. These modified atmospheres virtually put the fruits and vegetables to sleep to delay ripening and, together with low temperatures, often control spoilage organisms that attack the produce.

In some of the latest AMS research, efforts were made to combine the controlled atmosphere with a liquid nitrogen refrigeration system that may be more efficient than other systems now used. In this new system, liquid nitrogen is sprayed into the atmosphere of the trailer or rail car. It instantly vaporizes, spreading nitrogen gas in the atmosphere and lowering the temperature of the load compartment.

In recent tests, researchers exposed lettuce, bananas, tomatoes, strawberries, and peaches to atmospheres of 99- and 100-percent nitrogen under simulated transit conditions. In many instances, the gas had no harmful effect on the products, and even improved the quality of some products compared with those refrigerated in normal atmosphere.

In some cases, a 100-percent nitrogen atmosphere damaged the products, but the researchers point out that even 1 percent of oxygen in the test chambers eliminated this damage. Since it's virtually impossible to get a 100-percent nitrogen atmosphere with a refrigeration system under commercial conditions, there's little possibility of such damage.

The researchers put fruits and vegetables in an atmosphere of air as well as the 100- and 99-percent nitrogen atmospheres. They removed the samples of the products periodically and compared their flavor, appearance, and keeping quality.

The use of nitrogen with lettuce brought the most promising results. Lettuce appeared quite tolerant to pure nitrogen, and flavor, color, and keeping quality weren't harmed when the lettuce was stored as long as 10 days at 33°F., in either 99- or 100-percent nitrogen. The lettuce had a slightly stale odor when it was removed from the pure nitrogen atmosphere, but the odor disappeared quickly when the produce was brought into the air.

Nitrogen used with lettuce also retarded butt discoloration and russet spotting. In fact, when samples stored in nitrogen and in air were held in a refrigerated display case for 5 days after removal from the controlled atmosphere, all heads stored in air developed russet spotting, but only a third of those stored in pure nitrogen were slightly affected.

Ripening of tomatoes and bananas was slowed almost to a standstill by the nitrogen. When the bananas and tomatoes were returned to air, the fruit held in 99-percent nitrogen ripened slowly to a point where it could be sold, and its flavor wasn't harmed. However, the fruit held in 100-percent nitrogen was damaged and never completely ripened.

Strawberries kept as well for 7 to 10 days in 99-or 100-percent nitrogen as in air but they softened rapidly. However, their flavor wasn't affected and mold growth was retarded.

Peaches developed an off-flavor after only 4 days in 100-percent nitrogen, but kept their natural flavor in 99-percent nitrogen. The nitrogen also retarded peach decay.

The researchers make no claims about the costs or engineering feasibility of liquid nitrogen refrigeration, but they do say the nitrogen, properly used, won't harm the product.

A preliminary test of liquid nitrogen refrigeration previously has been made with trucks used in delivering frozen meat. Then, the researchers concluded that the nitrogen system cooled the trucks as effectively as the mechanical system, and possibly faster. However, they said, at present, general use of liquid nitrogen systems does not appear feasible until the operating cost of these systems is reduced.

A similar test of refrigeration with liquid carbon dioxide recently was completed, with mixed results.

The carbon dioxide refrigeration system was tested on a shipment of frozen meat. Previous research had shown carbon dioxide could injure fresh fruits and vegetables in a controlled atmosphere, but that it did not damage frozen meat.

When the carbon dioxide system was compared with a mechanical refrigeration system, researchers found the new method had the following disadvantages: (1) the carbon dioxide system weighs more than the mechanical one, (2) it costs more to operate, (3) loading crews must wait for the gas to be removed before entering the trailer, (4) the unit must be recharged with carbon dioxide several times during the trip while one fueling of diesel fuel in the mechanical system usually is sufficient for the trip.

However, the researchers say that more efficient trailers are already being designed that won't require as much carbon dioxide. If this trend continues, they say, carbon dioxide refrigeration may some day be on a par with mechanical systems.

In any case, when the transportation researchers perfect such a system using carbon dioxide or nitrogen, they know that nitrogen can be added to the load compartment without damaging fresh fruits and vegetables.

Such research represents another step forward in the search for more efficient ways to get wholesome farm products to the consumer's table—at lowest possible cost to consumers and maximum returns to farmers.

You can obtain more information on the carbon dioxide refrigeration system from a forthcoming AMS publication, "Liquid Carbon Dioxide Refrigeration in a Frozen Food Trailer (AMS-522)."

Single free copies may be obtained from the Marketing Information Division, AMS, USDA, D.C. 20250.

(*The author, a senior at Iowa State University, was a student assistant of the Marketing Information Division, AMS, at the time this article was written.*)

Lime Absorbs Unwanted Carbon Dioxide

USE of lime "blotters" to absorb unwanted carbon dioxide in sealed boxes of produce during storage appears to be a practical answer to the problem of controlling the carbon dioxide level.

The carbon dioxide given off in respiration by the produce sometimes accumulates to levels which injure the products stored in polyethylene-lined boxes.

With lime known to be an absorbent of CO_2 and film-lined boxes often used to extend storage life of produce, Agricultural Marketing Service horticulturists in the U.S. Department of Agriculture set out to determine the value of small lime inserts within lined boxes of apples, oranges, and lettuce.

Test results showed the small inserts kept the carbon dioxide below a level that would injure the produce.

The carbon dioxide given off by the produce can cause injury when it accumulates to 5 percent or higher in sealed polyethylene-lined boxes. Caustic soda solutions were long used to "scrub" the air of the excess CO_2 in controlled-atmosphere storage of apples. In recent years, however, lime has been found to be an effective CO_2 absorbent, with the twin advantages of low cost and elimination of corrosion problems.

AMS researchers in the Market Quality Research Division conducted tests to determine the effectiveness of various amounts of lime and the type of bag used for the small lime inserts.

Cartons of apples, head lettuce, and Florida Valencia oranges were packed, with a polyethylene liner in each box sealed at the top by tying. Half-pound and one-pound bags of fresh hydrated lime were inserted within the film liners. The bags used for the lime inserts were of single-wall kraft, waxed paper, polyethylene, and cellophane. The polyethylene packets were perforated with pin holes, and in one test a one-inch square was cut out and replaced with kraft paper. Commercially, the lime can be enclosed in conventional fruit pads used to prevent bruising.

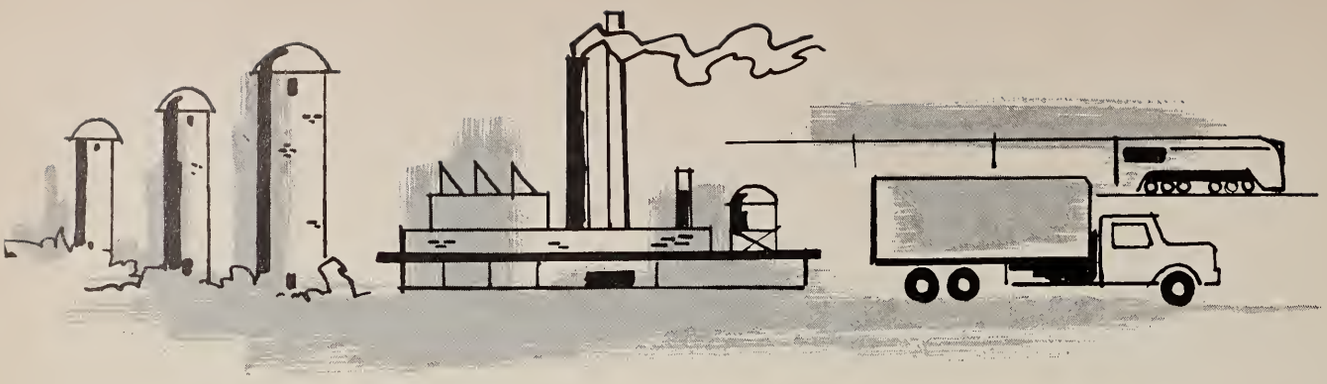
Red Delicious, Golden Delicious, and Red Stayman apples were stored at 32° F.; McIntosh apples at 40°; lettuce at 32° and 50°; and oranges at 32°. The 50°-temperature was tested with lettuce to determine the effectiveness of the lime insert when carbon dioxide is given off at a high rate.

The lime packets inserted in the sealed liners effectively absorbed the carbon dioxide released in respiration.

Half-pound kraft or waxed paper bags kept the CO_2 in cartons of apples at 1 percent or less for 2 to 3 months, while one-pound bags kept the CO_2 below the 1-percent level during 5 to 6 months of storage. Carbon dioxide was held to between 2 and 5 percent by enclosing the lime in perforated polyethylene bags or cellophane bags. Without the lime inserts, CO_2 averaged 5 to 8 percent.

In film-lined lettuce cartons, the CO_2 was held to 1 percent or less with the use of lime. Without the lime inserts, lettuce stored at 32° averaged 7 percent CO_2 and that stored at 50° averaged 13 percent. With oranges, carbon dioxide averaged 0.4 percent with lime and 9 without lime.

The use of lime to absorb CO_2 in some instances reduced apple scald, kept the fruit firmer, and was beneficial in preventing flesh and core browning.



DEFENSE GUIDE

— Key to National Survival

GENTLEMEN, *as president of this company, I'm pleased to announce another record sales year with good profits. Our employment turnover was the lowest in our history, a reflection of good employee morale. Allowing a substantial reserve for capital improvements and expansion, I'm sure this board will want to vote dividends for our shareholders at a level slightly above recent years. Before we get into details, are there any questions. . . ?"*

VOICE FROM REAR: "Mr. Chairman, I'm as happy as anyone about the progress of our company. But I just wonder how well our stockholders, our employees, and our company itself would make out in a national emergency?"

CHAIRMAN: "I'm glad you asked. We, along with many companies, have been doing a great deal of thinking and planning about the problems we'd run into, for example, if this country was subjected to nuclear attack. . . ."

VOICE: "I guess the Government would just take over, in that case."

CHAIRMAN: "No, the Government doesn't plan to 'take over'. We can get help and guidance from the Government, but we've got to protect ourselves so that we can continue or get back into operation quickly. The only way we can hope to do that is by planning now for continuity of management, security of production formulas and other records. And, of course, all possible protection of employees and facilities. We need to think about alternative sources or substitute supplies and power, and anticipate hundreds of other problems. In fact, the rosy picture that I described at the opening of this meeting could be erased literally overnight by a nuclear war unless we continue to maintain a position of readiness and encourage all members of our food industry to do the same."

This discussion could—and certainly should—be part of any management meeting in the food industry, from the smallest plant to the largest corporation concerned with processing, storing, and distributing food.

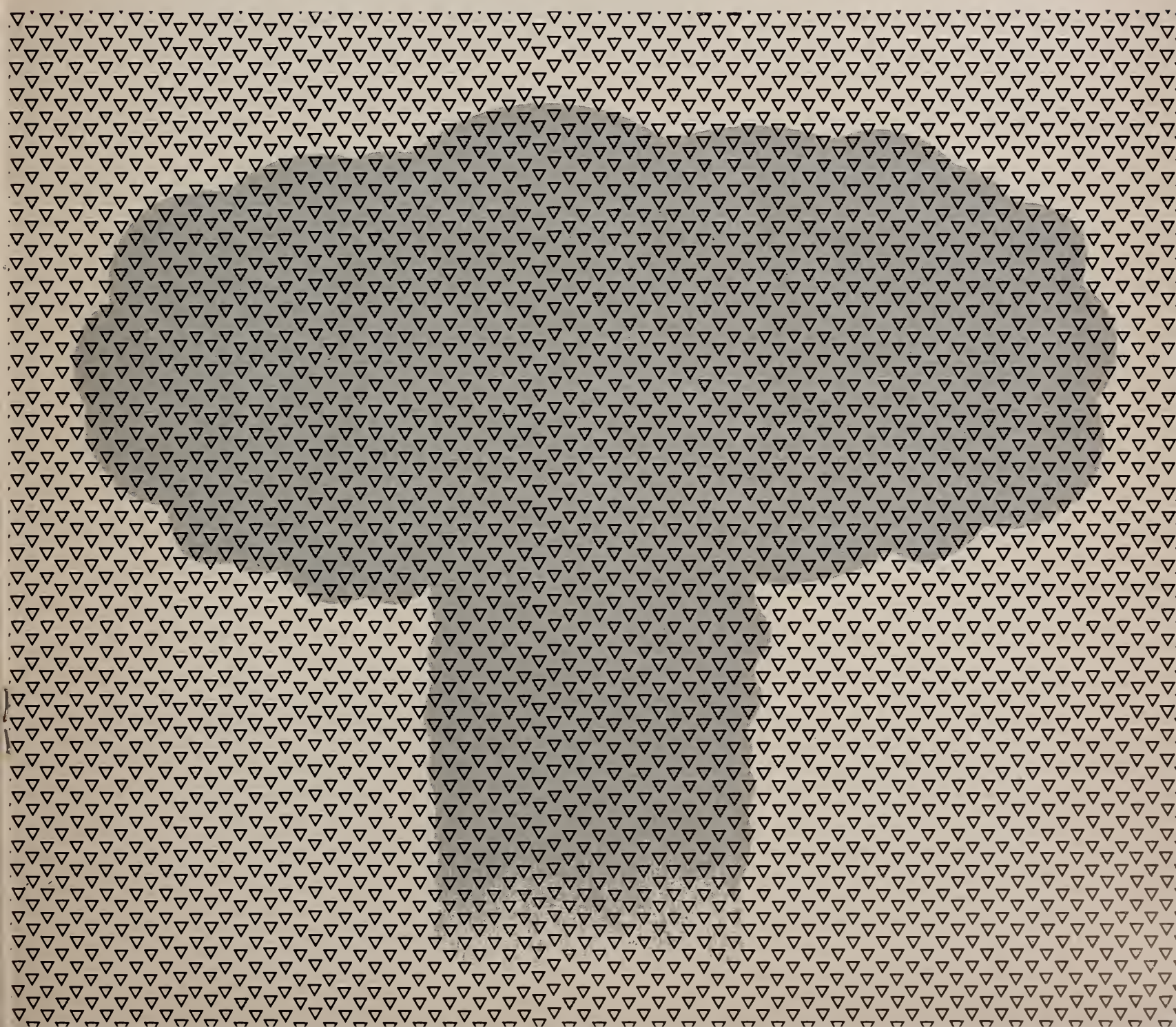
Information and guidance to help the food industry survive a nuclear war can be found in the recently published Guide to Civil Defense Management in the Food Industry, issued by the Agricultural Marketing Service of the U. S. Department of Agriculture in cooperation with the Department of Defense.

The Guide is geared to increasing survival chances of the two basic elements of America's highly complex and efficient food industry—people and facilities. With the certain knowledge that a prime target of a nuclear attack would be the food processing, storing, and distributing facilities and equipment as well as the highly trained and specialized people who manage and operate them, the publication outlines civil defense preparations to protect employees, facilities, and records; discusses operations in immediate post-attack situations; and outlines Government-industry roles in preparedness and post-attack plans.

The publication is another step by the Agricultural Marketing Service in carrying out its emergency food management assignments, which are part of a broad range of food and agricultural defense responsibilities assigned to the Secretary of Agriculture. As is the case with AMS, other agencies of USDA have emergency duties which parallel their regular functions.

The food management activities of AMS extend from the farm gate through the wholesale level in the distribution chain. By agreement with individual States, some of these responsibilities will be shared by some State governments, although, in general, the States will be concerned primarily with mass feeding and with distribution of food at the retail level, including consumer rationing programs and other activities necessary to a fair equal distribution of available consumer food supplies.

E FOR FOOD INDUSTRY

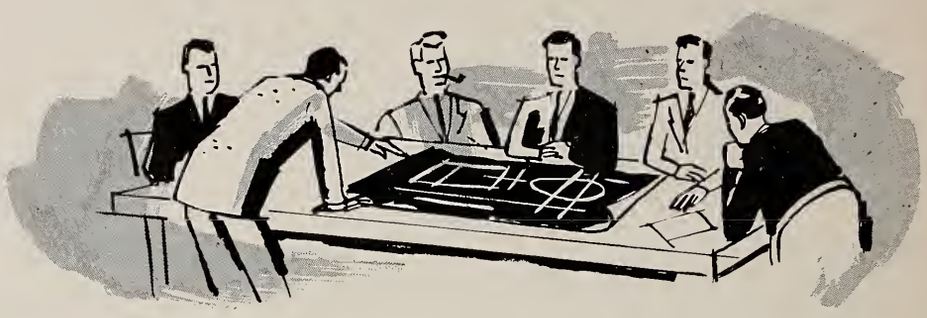


URGENT READING for EVERYBODY in the FOOD BUSINESS

Guide to Civil Defense Management in the Food Industry
(Agricultural Handbook No. 254)

32 pages of practical actions any large or small food company can take to protect people and facilities in a nuclear war or national disaster.

Write: Agricultural Marketing Service, U. S. Department of Agriculture, Washington, D.C., 20250.

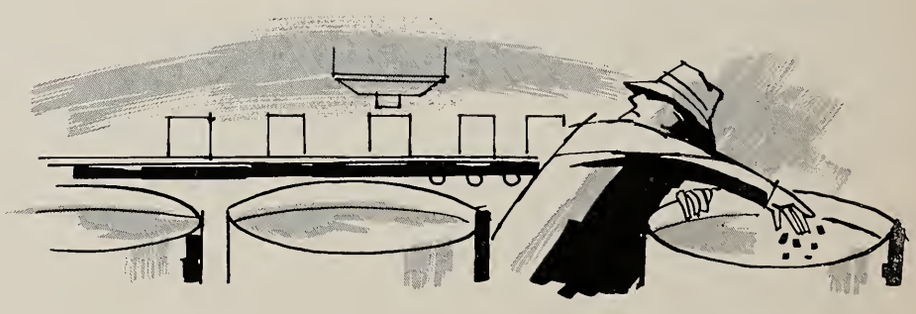


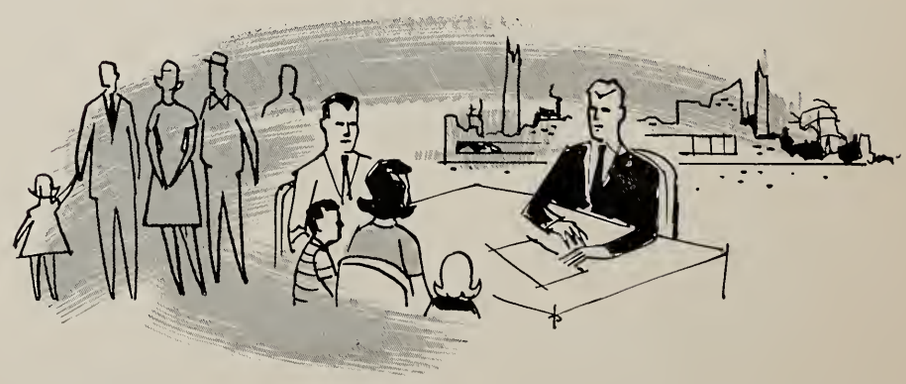
Emergency food management planning by AMS has three basic objectives.

1. Conservation and orderly use of surviving food supplies.
2. Processing of raw food stocks into the form suitable for consumption or preservation.
3. Assistance in maintaining the orderly distribution of food for the surviving population and to meet our military needs and those of our allies.

These objectives can only be attained by a food industry whose people, stocks and facilities substantially survive a nuclear attack. Thus, civil defense measures for the food industry are the foundation stones upon which national survival and victory may depend.

Copies of *Guide to Civil Defense Management in the Food Industry,* Agricultural Handbook No. 254, are available free to food and allied industries. Quantities for use of key employees of food concerns and members of trade associations should be requested on your letterhead, from Agricultural Marketing Service, Special Services Division, USDA, Washington, D.C. 20250.





Grading Christmas Trees

In the next few weeks, vacant lots and parking plazas all over the country will be sprouting a fresh green crop of Christmas trees. And millions of householders will sally forth to find the tree that's exactly the right holiday decoration for their living rooms.

Close to 45 million Christmas trees were sold in the United States last year, for more than $85 million. Most of these trees make long journeys, from the wooded areas of the U.S. and Canada to our big population centers—which is one of the principal reasons that the Christmas tree industry asked the Agricultural Marketing Service of the U.S. Department of Agriculture to establish U.S. Standards for Christmas trees. The standards describe various levels of tree quality and serve as a common language to make long-distance trading easier.

The standards are used primarily by the wholesale trade—but anyone can use the U.S. Standards to judge the quality of a tree. Here are a few tips:

A *U. S. Premium* tree must be of at least medium density and show to good effect from any direction. There must be no noticeable defects—no holes or gaps in the foliage, broken or unduly long branches, crooks in the stem or barren lower branches. This is a top-quality tree that could be put in the center of the room.

A *U. S. No. 1* tree must have all the quality of a U. S. Premium tree, except that one face may have a defect of shape. If the tree is going into a corner or against a wall, the U. S. No. 1 tree may be adequate.

A *U. S. No. 2* tree must have at least two adjacent faces free from damage or defects.

All trees that qualify for a U. S. grade must be:

Fresh—with pliable, firmly attached needles and only slight shattering.

Clean or Fairly Clean—at least moderately free of moss, lichen, vines and other undesirable foreign matter.

Healthy—with a fresh, natural appearance characteristic of the species.

Well trimmed—cleared of all barren branches below the first whorl, and smoothly cut at the butt.

Density and shape are the two things that vary most widely among the trees you'll be looking at. Trees must be at least as dense as the one above, in order to grade U.S. Premium or U.S. No. 1. Any tree with less density than the one below is a "Cull."

These two trees have enough density and the correct taper, all the quality of a U.S. Premium, but have defects in shape—so they grade U.S. No. 1 instead of U.S. Premium. The tree above has barren lower branches, and the one below has a crook in its stem.

More serious defects in shape—such as the hole in the crown of the tree above, and the crook in the stem of the tree below—mean a U.S. No. 2 grade. Trees of this grade must have at least two adjacent faces free from damage or defects.

The Difference Between Poultry Inspection and Grading

MOST people know that American poultry is processed under close Federal supervision. But there still seems to be some confusion between poultry inspection and grading.

They are two different operations, done by different people, for a different purpose. But both are done by experts of the U. S. Department of Agriculture's Agricultural Marketing Service.

Poultry inspection is an examination of the bird during slaughter and processing, to insure that it is wholesome and suitable for people to eat. Poultry inspection is required by law for all poultry moving in interstate and foreign commerce.

Poultry grading is an examination of the bird during processing to determine its level of quality. It is available to packers on a voluntary basis; it is not required. About half of all poultry sold is Federally graded.

The inspection mark is circular, as shown in the illustration. You can be sure that birds bearing this mark are safe to eat, assuming they have been properly handled after inspection. Every bird with an inspection mark has been individually inspected for wholesomeness by a trained USDA expert under the supervision of a fully qualified licensed veterinarian.

The grade mark is shield-shaped, as the photo shows. Grade A is the top grade—this poultry has the highest meat yield, is well finished and has the finest appearance. Most buyers prefer Grade A poultry when the bird is to be carved at the table. Grade B is the next highest grade. Birds of this grade may be slightly lacking in meatiness and finish, and may have dressing flaws.

THERE are no levels of wholesomeness—the bird is either wholesome, or it is rejected and cannot be packed and sold. While all graded poultry is inspected, not all inspected poultry is graded.

These points about inspected and graded poultry are explained in more detail in two pamphlets which are available free as single copies from the Office of Information, U. S. Department of Agriculture, Washington, D.C. 20250. One is "How to Buy Poultry by USDA Grades" (Marketing Bulletin No. 1). The other is "Poultry Inspection, a Consumer's Safeguard," (PA-299).

New Lab for Dairy Inspection and Grading

Northeastern Dairy Manufacturers are Getting Faster Grading Reports on Their Products

By Edwin F. Garbe

DAIRY manufacturing plants in Northeastern States are receiving U. S. Department of Agriculture grading reports on their products much faster since the opening in September of a new dairy products inspection and grading laboratory in Syracuse, N.Y.

The improved service by the centrally located laboratory, a unit of the Dairy Division of USDA's Agricultural Marketing Service, is permitting earlier release of dairy products for domestic or export movement. In the past, samples of products from the Northeastern area were shipped to the USDA laboratory in Chicago.

Some 130 dairy manufacturers; local, State, and Federal officials; and food and dairy publications editors were given a first-hand look at the modern testing facilities during an open house held at the laboratory on September 18. Special guests, who spoke at the opening ceremony, included the New York State Commissioner of Agriculture, Don J. Wickham, and the Mayor of Syracuse, William F. Walsh.

Commissioner Wickham, in welcoming the new laboratory, noted that "Any quality program for dairy products is dependent upon good laboratory facilities and constant checking and controls. We welcome the new laboratory—on behalf of the Eastern States—where both industry and government can continue to work for improved dairy products."

Alexander Swantz, Acting Director of AMS's Dairy Division, explained the role of the new laboratory, and Harold E. Meister, Acting Deputy Director, reviewed Federal-State programs for the dairy industry. Others on the program were Dr. J. L. Dizikes, Dairy Division's chief chemist, who outlined the scope and techniques of the laboratory services, and George W. Fry, supervisory chemist at the Syracuse laboratory, who conducted a tour of the new facilities.

The new laboratory supports the Dairy Division in its inspection and grading service, by testing various dairy products for compliance with U.S. quality or grade standards and with contract specifications. This Federal-State service is performed on a voluntary basis, with the users paying all costs under a fee system.

In explaining the role of the new laboratory, Swantz said:

"There are many users of our joint Federal-State services in the Northeast. This is an important milk producing area and has the largest concentration of consumers in the country. Many people benefit from the services that will be performed by this laboratory—the dairy industry, consumers, exporters and importers, institutions, and the school lunch and direct distribution programs—in fact, just about everyone who deals in or uses manufactured dairy products."

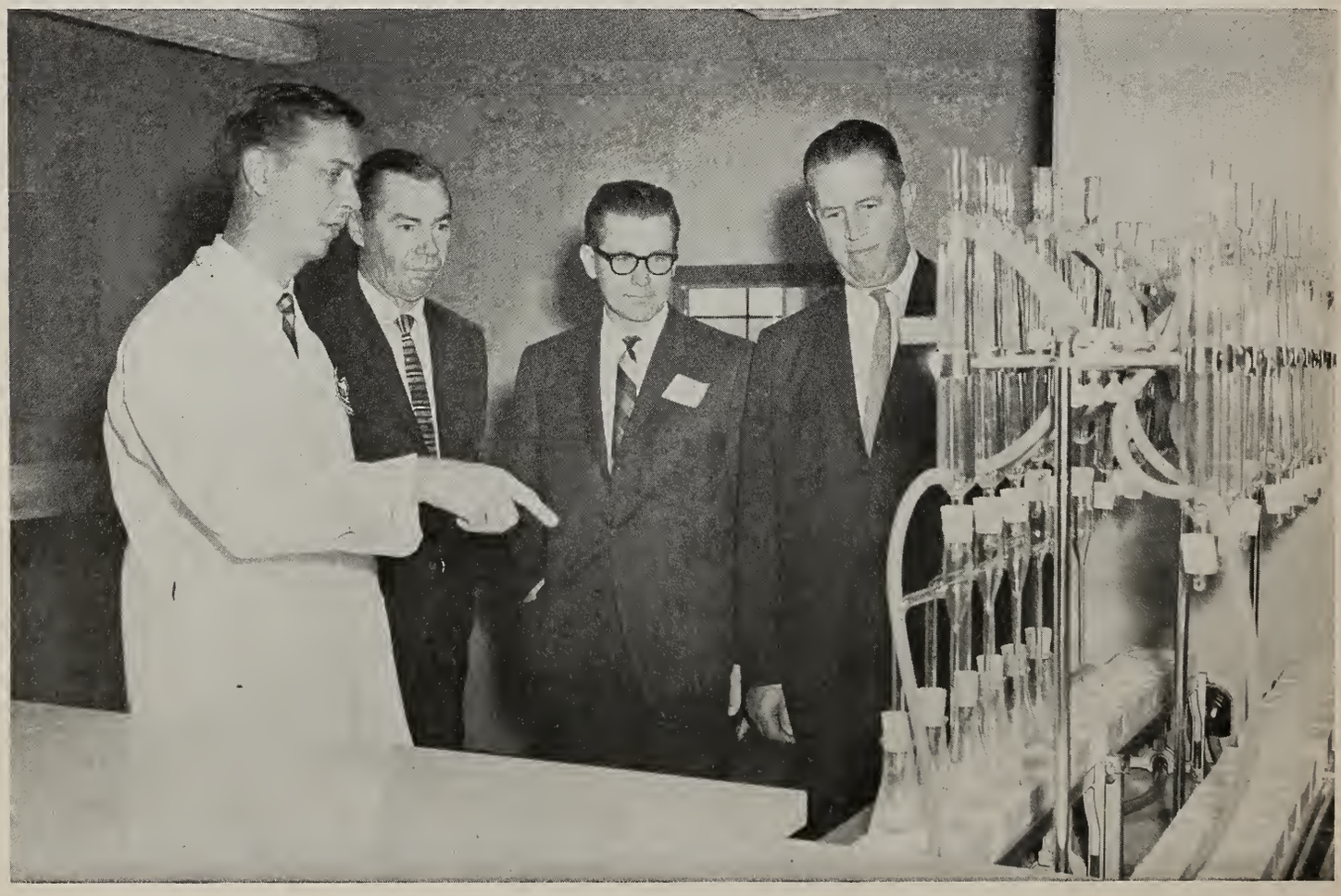
With 2,450 square feet of floor space in Syracuse's Midtown Plaza Building, the new facility has rooms for bacteriological testing, fat analysis, compositing and sample preparation, as well as reception and clerical areas. Laboratory personnel include two analytical chemists, a bacteriologist, a dairy manufacturing technologist, and two clerical employees.

Plants receiving the service are located primarily in New York, Vermont, Massachusetts, Pennsylvania, Maryland, and Virginia. They are now receiving grading results as much as three days earlier than before.

A wide range of dairy products are tested: dry whole milk, instant nonfat dry milk, evaporated and sweetened condensed milk, anhydrous milk fat, natural and processed cheese, and miscellaneous products such as sterilized canned milk, butteroil, casein, and malted milk.

LeRoy Iverson, dairy technologist at the new Syracuse dairy lab, prepares a "smear" of reconstituted nonfat dry milk for direct microscopic bacteria count.

Above, from left, George Fry, supervisory analytical chemist in charge of the laboratory; Miss Theresa D'Eredita, staff member; and LeRoy Iverson. Below, Fry describes equipment used for testing nonfat dry milk for moisture content. Others from left, are William F. Walsh, Mayor of Syracuse, N. Y.; Alexander Swantz, Acting Director, Dairy Division, AMS; and, Commissioner Don J. Wickham of the New York State Department of Agriculture and Markets.



In his talk at the opening ceremony, Swantz recalled that:

"During the last few years, many industry users and cooperating State agencies have asked that we locate a laboratory here in the Northeast region of the United States. We reviewed the need for a laboratory several times.

"Our study showed that the volume of samples moving to our Chicago laboratory from users in this region was increasing steadily. Last year, for example, about 15 percent of all tests performed by the Chicago laboratory was on products from plants in this area. Then too, there were delays and other disadvantages when samples of product had to be shipped to Chicago for final analysis and quality evaluation."

Last year, the Dairy Division graded more than 200 million pounds of dry milk produced in the six major States that the lab will serve. That was enough to fill more than 3,500 railroad cars. About 17,000 samples were tested, all at the Chicago laboratory, which is continuing to serve the Midwestern and Plains States. Other Dairy Division laboratories are a Federal-State unit in Seattle and a Federal unit in San Francisco.

"Many States, including most of the States in this Northeastern region," Swantz said in his address, "have programs that help producers and plants maintain high quality products of the variety and composition the consumer wants. These include quality tests on producers' milk, and checks on condition of plant and equipment, processing procedures, effectiveness of their sanitary practices, and protection of products during storage and distribution to consumers."

Mr. Swantz further stated, "We are pleased to recall the close and friendly working relationships we have had down through the years with the States in this area. In the State of New York, we carry out our dairy product inspection, grading, and quality control work with the splendid cooperation of the New York State Department of Agriculture and Markets. We rely on their State employees for drawing samples of products and to check on plant operations that may affect quality or condition of the products. When they finish their work, they pass the samples on to our laboratory for the kind of bacteriological and chemical composition tests that will be carried on right here in Syracuse from today on."

(Mr. Garbe is Acting Chief, Inspection and Grading Branch, Dairy Division, AMS.)

Supervisor Fry and staffer Iverson prepare dilutions for bacteria "plate" count of nonfat dry milk at the new lab for dairy inspection and grading.

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Science Keeps Mistletoe Fresh Longer

SCIENCE has come to the aid of holiday romances in the nick of time, before the approaching holiday season ushers in another leap year.

But disillusioning as it may be to the young in heart, the research workers of the Agricultural Marketing Service of the U.S. Department of Agriculture are really looking for ways to improve the market for an agricultural product —not for ways to keep romance alive. They have found out how to stretch the time before leaves and berries fall off of mistletoe to at least 18 days—if not longer.

Such problems can be avoided by dipping the mistletoe in an inexpensive solution, according to tests made by AMS marketing researchers. These tests are an example of how marketing research, which deals mainly with more substantial agricultural products, can help nearly every agricultural product put its best foot forward in the market place.

The mistletoe treated in the AMS tests remained fresh and green, and the berries were still white and firm when examined 18 days after treatment. The leaves and berries remained intact on 99 percent of the treated mistletoe, but fell off more than 12 percent of the untreated mistletoe.

These good results were obtained with each of three plant hormones: 2,4-D; 2,4,5-T; and alpha naphthalene acetic acid. The hormones were used at a rate of ½ ounce per 19.5 gallons of water. Good results were also obtained with an aging inhibitor, N6 benzyladenine. The inhibitor was used at a rate of ¼ ounce per 19.5 gallons.

In other tests, mold was controlled by dipping the mistletoe in several commercial fungicide baths after treatment in the hormone or inhibitor solution. Each of the fungicides was used at a rate of ½ ounce per 1.95 gallons of water.

After treatment, the mistletoe was dried in the air and held in cellophane bags for 13 to 14 days at room temperature (75° to 78° F). The water used in all treatments was demineralized and contained a wetting agent, added at a rate of ¼ pint per 100 gallons of water. Demineralized water was used to prevent undesirable chemical reactions; the wetting agent helped maximize contact or coverage of the mistletoe by the chemicals used in the treatment.

The treatment resulted in reduction of mold development ranging from 50 to 100 percent, as compared with untreated mistletoe. Leaves and berries remained intact with somewhat greater frequency on mistletoe in vented bags than in nonvented bags.

No damaging side effects from the treatments were observed on the mistletoe, nor were the chemicals used injurious to either handlers or equipment. In some fungicide, hormone, or inhibitor treatments, smaller doses than those described here were ineffective, and larger doses did not improve the results.

Overgenerous applications proved disastrous in the case of the aging-inhibitor, in which a dose of ¼ ounce in 6.8 gallons caused leaves and berries to fall off.

A number of other solutions, and a hot water dip applied without chemicals, failed to produce good results. The tests were made with Texas-grown mistletoe by Dr. M.A. Smith, at the Chicago laboratory of the Market Quality Research Division, AMS.

PECAN CROP BREAKS ALL RECORDS

THIS YEAR'S pecan crop really went to town productionwise. Its estimated 283 million pounds (141,500 tons) not only topped all previous records, but is more than four times the size of last year's short crop, and a sharp 58 percent above the five-year average.

Improved varieties total 162.8 million pounds—nearly five times as large as last year and nearly double the five-year average.

Leading the production parade are Georgia, with a total of 82 million pounds; Alabama, 52 million; Texas, 40 million; and Louisiana, 32 million pounds.

The Agricultural Marketing Service of the U.S. Department of Agriculture is lending a hand to pecan producers by placing pecans on its Plentiful Foods List for December. And after Christmas, AMS's Food Distribution Division will issue thousands of merchandising fact sheets on pecans to the food service industry and the grocery and bakery trades.

Numerous other information materials will go to the Nation's press and TV and radio stations, stressing to consumers the abundance of this year's pecan crop.

Production of the four edible tree nuts—pecans, almonds, walnuts and filberts—is expected to exceed the 1962 harvest by 74 percent, and be 34 percent above average. Only walnut output will be smaller than last year and only filberts less than average. But almonds will run sharply above last year's crop, and the average.